CLAIMS

Please cancel currently pending Claims 1-15, as filed by telefax on June, 16, 2004, which are provided on the Amended Sheets attached to the International Preliminary Examination Report provided herewith. Please add the following new claims:

1. (CANCELLED).
2. (CANCELLED).
3. (CANCELLED).
4. (CANCELLED).
5. (CANCELLED).
6. (CANCELLED).
7. (CANCELLED).
8. (CANCELLED).
9. (CANCELLED).
10. (CANCELLED).
11. (CANCELLED).
12. (CANCELLED).
13. (CANCELLED).
14. (CANCELLED).
15. (CANCELLED).

16. (New) A method for the treatment or prevention of a secondary dental caries in a subject comprising:

identifying a subject in need of a composition that treats or prevents a secondary dental caries; and

providing to said subject a bisphosphonic acid derivative, or a pharmaceutically acceptable salt or a hydrate thereof.

17. (New) The method according to claim 16, wherein the caries is at the interface between natural dental material and a filling material.

18. (New) The method according to claim 16, wherein the bisphosphonic acid derivative is formulated into a depot, paste, tooth-paste, putty, solution, rinse solution, mouth-wash, lozenge, or gum.

19. (New) The method according to claim 16, wherein the bisphosphonic acid derivative is formulated as a solution, depot, or paste.

20. (New) The method according to claim 16, wherein the bisphosphonic acid derivative is of the formula I

$$R^1\text{-}C(PO_3H_2)_2\text{-}R^2 \qquad (I)$$

wherein R^1 and R^2 may be independently selected from hydrogen, halogen, COOH, optionally substituted $C_{1\text{-}12}$-alkyl, optionally substituted aryl, optionally substituted $C_{3\text{-}9}$-cycloalkyl, optionally substituted heterocyclyl, optionally substituted heteroaryl, optionally substituted $C_{1\text{-}12}$-alkyl-aryl, optionally substituted $C_{1\text{-}12}$-alkyl-$C_{3\text{-}9}$-cycloalkyl, optionally substituted $C_{1\text{-}12}$-alkyl-heteroaryl, heteroaryl, heterocyclyl, optionally substituted $C_{1\text{-}12}$-alkyl-heterocyclyl, amino, optionally substituted $C_{1\text{-}12}$-alkyl-amino, optionally substituted amino-$C_{1\text{-}12}$-alkyl, optionally substituted amino-$C_{3\text{-}9}$-cycloalkyl, optionally substituted $C_{1\text{-}12}$-alkyl-halide, optionally substituted $C_{1\text{-}12}$-alkyl-OH, optionally substituted $C_{1\text{-}12}$-alkyl-SH, alkoxy, optionally substituted $C_{1\text{-}12}$-alkyl-O-alkyl, $C_{1\text{-}12}$-alkyl-S-alkyl, optionally substituted $C_{1\text{-}12}$-alkyl-COOH, and optionally substituted $C_{1\text{-}12}$-alkyl-PO_3H_2,
or a pharmaceutically acceptable salt or hydrate thereof.

21. (New) The method according to claim 16, wherein the pharmaceutically acceptable salt is a mono-, di-, tri-, or tetrasodium salt.

22. (New) The method according to claim 18, wherein the bisphosphonic acid derivative is methanehydroxybisphosphonic acid.

23. (New) The method according to claim 18, wherein the bisphosphonic acid derivative is ethane-1-amino-1,1-bisphosphonic acid.

24. (New) The method according to claim 16, wherein the bisphosphonic acid derivative, or a pharmaceutically acceptable salt or a hydrate thereof is present in a dental filling material.

25. (New) The method according to claim 24, wherein said dental filling material comprises amalgam or plastic.

26. (New) The method according to claim 16, wherein the bisphosphonic acid derivative is in the form of a depot present in a sealing material.

27. (New) The method according to claim 16, further comprising providing etidronate, pamidronate, alendronate, tiludronate, risedronate, zoledronic acid, clodronic acid, ibandronic acid, neridronate, olpadronate, incadronate, 1-Hydroxy-3-(1-pyrrolidinyl)propylidene]bisphoshonate, or [1-Hydroxy-2-imidazo-(1,2a)pyridin-3-ylethylidene]bisphosphonate to said subject.

28. (New) The method according to claim 16, further comprising providing etidronate, pamidronate, alendronate, tiludronate, risedronate, zoledronic acid, clodronic acid, ibandronic acid, neridronate, olpadronate, incadronate, 1-Hydroxy-3-(1-pyrrolidinyl) propylidene] bisphoshonate, or [1-Hydroxy-2-imidazo-(1,2a)pyridin-3-ylethylidene] bisphosphonate to said subject.

29. (New) The method according to claim 16, wherein the concentration of a bisphosphonic acid derivative provided to said subject is between 0.001 to 50M.

30. (New) The method according to claim 16, wherein the bisphosphonic acid derivative is applied to the tooth.

31. (New) The method according to claim 16, wherein the bisphosphonic acid derivative is applied to a filling material.

32. (New) The method according to claim 16, wherein bisphosphonic acid derivative is provided to the dental enamel of a tooth upon treatment for primary caries.

33. (New) The method of Claim 16, further comprising measuring or monitoring the treatment or prevention of said secondary dental caries.

34. (New) A dental composition comprising an amount of bisphosphonic acid derivative, or a pharmaceutically acceptable salt or a hydrate thereof sufficient to treat or prevent a secondary dental caries.

35. (New) The dental composition of Claim 34, wherein said dental composition is a dental filling material.

36. (New) The dental composition of Claim 34, wherein said dental composition is a dental sealing material.

37. (New) The dental composition of Claim 34, wherein said dental composition is a dental depot.